

pipe-joint in the market. Mr. Stanford also patented in 1885 several modifications of a most ingenious friction-clutch, for which he was awarded a silver medal in 1886.

After his first attack of rheumatic fever in the Pyrenees, Mr. Stanford had at several years' interval two other similar illnesses, and the heart weakness which supervened prevented him for some time before his death from undertaking any work demanding great physical exertion or undue excitement; but until the middle of 1888 it did not interfere with his regular indoor office work, in every branch of which he was most able and proficient. He was advised in the early spring of this year to give up work entirely, and take rest and change in the form of a voyage to the Mediterranean. This he did, but the excitement and exertion were unfortunately too much for him, and he returned worse in every way than when he started. He then went to his home at Worthing, and two days before his death was out on the pier in a bath-chair with Mr. Ernest Mansergh, who had charge of the works, and to whom he spoke quite cheerfully of the improvement which total rest was bringing him. This was, however, a false hope, and he died suddenly and quietly on Saturday the 18th of May, 1889.

Mr. Stanford made friends wherever he went, he was always considerate and helpful to his juniors, and courteous and gentlemanly to all with whom he was brought into business contact, and his loss is very deeply lamented by those with whom he was most intimately connected.

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GEORGE TURNBULL, who for several years previous to his death had occupied the position of Father of the Institution, passed away on the 26th of February, 1889. He was the youngest of eleven children of William Turnbull, of the Huntingtower bleach-fields, near Perth, and was born at Luncarty on the 2nd of September, 1809. He received his early education at the Perth Grammar School, and finished his studies at Edinburgh University. A comrade named David Hogarth, to whom through life Mr. Turnbull remained strongly attached, passed on to London in order to study engineering under Thomas Telford, and Mr. Turnbull resolved to adopt a similar course. His friend Hogarth eventually was ordained, and was for thirty-three years Rector of the Isle of Portland, where he died; but George Turnbull had found his true vocation, and speedily rose to be one of Mr. Telford's most trusted assistants. Beginning in 1828 on the preparatory works of

the St. Katharine's Docks, he was, on the 10th of February, 1829, elected an Associate of the Institution of Civil Engineers, of which Telford was the President. It is said that Mr. Turnbull gave his services gratuitously as reporter of the Proceedings, but as the same circumstance has been recorded of several others, it is probable that some of the younger members agreed among themselves to fulfil those functions for a certain period in rotation. The offer of Mr. Turnbull at any rate received the sanction and approval of his chief, and thenceforward, until Telford's death in 1834, Mr. Turnbull was his professional representative and confidential clerk, and eventually became a participant in his residuary estate. For some years before Mr. Telford decided to withdraw from the profession his engagements were very numerous and varied. As a result, young Turnbull saw plenty of work, and his name is associated with Sir Henry Parnell's scheme of 1831 for a Metropolitan water-supply, with the Bute Docks at Cardiff, the Middlesborough Docks, the Folkestone and Dover Harbour Works, a portion of the Works at Birkenhead, the Shakspeare Tunnel and Viaduct at Dover, and the construction of 15 miles of the London end of the Great Northern Railway. His reputation being now fully established, he was, through the recommendation of Sir William Cubitt, Past President Inst. C.E., and of Mr. James Meadows Rendel, Past President Inst. C.E., selected in 1850 for the responsible position of Chief Engineer of the East Indian Railway, his control extending from Calcutta to Delhi. This appointment he held until the opening of the railway to Benares in 1863, when Mr. Turnbull's active professional life may be said to have terminated. Four or five years later he acted in Bombay as an arbitrator in a case of disputed contract accounts, and again he served in 1869-70 in a similar capacity in respect of the Chord Line of the East Indian Railway. The latter was a very intricate affair, and extended over a lengthened period, but Mr. Turnbull finally brought about an amicable solution. On its completion he settled at Rosehill, Abbot's Langley, a small estate which he had purchased in 1875.

The evening of Mr. Turnbull's life was passed in retirement at Rosehill. The affairs of the parishes of Abbot's Langley and Hunton Bridge frequently shared his attention. He became Chairman of the Hunton Bridge Gas-works, also of the Hunton Bridge and Abbot's Langley Water-works Company, an undertaking that owed its existence to his initiative, and a member of the Watford Board of Guardians. In the City he was Chairman of the Assam Company. Of honorary distinctions he was a Fellow and Member of the Senate

and University of Calcutta. He was also a Fellow of the Royal Astronomical and Royal Geographical Societies, and as has been already mentioned, a very old Member of the Institution, having been borne on the books for a period of over sixty years. He was transferred from Associate to Graduate on the 9th of January, 1838, and from Graduate to Member on the 5th of May, 1840. Of his connection with the Institution, it may be said that, with the exception of his period of residence in India, he was constantly in touch with the office, besides being a frequent contributor to the discussions in matters relating to India. His long membership, coupled with a remarkably accurate memory, made him a most valuable coadjutor when it was necessary, for the purposes of obituary notices, to trace the careers of comrades who predeceased him, and applications for information, which might have taxed the patience of any by their frequency and persistence, were always courteously and effectively responded to.

The above outline of Mr. Turnbull's professional career may be filled in by a few particulars of his more intimate life. In his early association with Telford he had the opportunity of meeting many notable characters, and in after life he was wont to recall with pleasure the table-talk of that renowned Engineer and his associates—the visits of Robert Southey to Abingdon Street, stories of Robert Burns, redolent of Scottish humour and brightened by the poetry of a past age. He was long and intimately associated with Thomas Brassey, who was the subject of his constant eulogy. It will be noted that Mr. Turnbull was in India during the stirring times of the mutiny, and his fortitude and devotion enabled him to convert the temporary wreck of that disastrous hour into a colossal memorial of his varied skill. Those who did not know him would, from his quiet manner, never have suspected the existence of the latent energy he had in reserve when occasion demanded. One illustration, a trifling one compared with the unlooked for obstacles which confronted him during the mutiny, will suffice to show this. In England, the hostility to a railway invading the rights of landowners is smoothed away by Act of Parliament. It was far otherwise in India in Mr. Turnbull's time, and as Government shrank from the necessary action the Engineer had to settle matters himself. In a particular instance Mr. Turnbull on his own authority cut a lane, 100 feet wide, through jungle and other impediments from Howrah up to Chandernagore and braved the consequences. As it happened, no litigious results followed, but the Chief Engineer was warned not to do the like any more. Mr. John Marshman, the editor of "The Friend of India," and

Mr. Turnbull's personal friend, on hearing of this exclaimed, "Well! there has not been such an act of audacity performed in these parts since the time Admiral Watson opened fire upon the Dutch fleet in the Hooghly when we were at peace with Holland." But elastic energy in the face of danger was not Mr. Turnbull's only attribute. Domestic virtues, generosity to his friends, forgiveness of injury, and sympathy with suffering, endeared him to those within that more intimate sphere which it is not the province of this notice to invade. Perhaps his chief characteristic was a singular simplicity of manner and a distaste for ostentation. This probably induced him to decline the honour of knighthood, which was pressed upon him by Lord Elgin at the close of his Indian career. For those who knew him not, it will suffice to say that in the roll of eminent engineers, who have relied upon the arts of peace in furthering in distant climes the honour and influence of their country, there occurs no name more worthy of record than that of him who forms the subject of this notice.

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ALEXANDER CUNNINGHAM BOOTHBY, eldest son of Colonel Boothby, of St. Andrew's, N.B., was born on the 26th of February, 1857. He received his education at St. Andrews, and thereafter entered the office of the late Mr. John Sang, an engineer who had at that time extensive business connections in Fife. While with him Mr. Boothby was engaged in many important local works, including the water-supplies of Cupar, and other towns in Fife. He was also employed in the preparation of the Parliamentary plans and estimates of the Burntisland Direct Mineral Railway, and various other schemes which had been entrusted to Mr. Sang. After leaving Mr. Sang's office in 1876, he commenced business in Kirkcaldy with Mr. L. S. Little. This partnership continued for five years, and thereafter Mr. Boothby carried on business on his own account in Fife, until his more extended practice necessitated his having an office in London, when he assumed as partner Mr. Claud R. Watson, who had served articles in his office. Amongst the more important works carried out by Mr. Boothby may be mentioned the Elie, St. Monan's, and Earlsferry water-works, the Kinghorn sewage-works, and several other minor town and estate water-, sewage-, and drainage-schemes. He originated and was employed to prepare the parliamentary plans and estimates in connection with the Seafield dock and railway scheme, which was carried through Parliament in the face